

CLAIMS LISTING

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-37. (Canceled)

38. (Withdrawn) A method comprising:

determining, by a video controller, whether a transmit buffer is being drained at a rate that is different from previously-specified rate; and

if the transmit buffer is being drained at the different rate,

recalculating, by the video controller, a target frame size for compressed video frames to maintain a target frame rate or to effect a new target frame rate, and/or

adjusting, by the video controller, a threshold value associated with the transmit buffer, the threshold value associating a quantity of data stored in the transmit buffer with scheduling of video frame compression.

39. (Withdrawn) The method of claim 38, wherein the determining further comprises:

receiving a byte count value from a transmit buffer, the byte count value indicating a number of bytes in the transmit buffer;

calculating the different rate based at least in part on the byte count value; and

comparing the different rate to the previously-specified rate.

40. (Withdrawn) The method of claim 39, wherein the recalculating further comprises decreasing a target frame size adjustment value, if the byte count value is

zero, or increasing the target frame size adjustment value, if the byte count value is not zero, and applying the target frame size adjustment value to the target frame size.

41. (Withdrawn) The method of claim 39, wherein the adjusting further comprises decreasing a threshold value adjustment value, if the byte count value is zero, or increasing the threshold value adjustment value, if the byte count value is not zero, and applying the threshold value adjustment value to the threshold value.

42. (Withdrawn) The method of claim 38, further comprising calculating an initial threshold value based on at least one of a next send time and a current byte rate, the next send time being an amount of time left before a video compressor is able to compress another video frame and the current byte rate being a rate at which bytes of compressed data are being read from the transmit buffer.

43. (Withdrawn) The method of claim 42, further comprising calculating the next send time based at least in part on an estimated compress time for a video frame and a video capture interval for a video capture component.

44. (Withdrawn) The method of claim 38, further comprising receiving, by the video controller, a video frame and, if a byte count value received from the transmit buffer is less than the threshold value, scheduling, by the video controller, compression of the video frame by a video compressor.

45. (Withdrawn) The method of claim 44, further comprising transferring a compressed video frame received from the video compressor to the transmit buffer.

46. (Withdrawn) The method of claim 44, further comprising, if the received video frame is a B-frame, scheduling compression of the B-frame regardless of whether or not the byte count value is less than, equal to, or greater than the threshold value, the B-frame being a video frame which is predicted from a previously encoded P-frame and a P-frame currently being decoded.

47. (Withdrawn) A quantitizer selector comprising:

a processor; and

logic to be operated by the processor to

receive a target frame size from a video controller,

calculate a quantization parameter for a macroblock of a current video frame to be compressed by a video compressor based at least in part on the target frame size, and

supplying the quantization parameter to a bit rate control algorithm of the video compressor to facilitate compression of the current video frame.

48. (Withdrawn) The quantitizer selector of claim 47, wherein the logic is further to calculate the quantization parameter based on an amount of compressed video image data generated for macroblocks of a previous video frame, and on an amount of compressed video image data generated for previous macroblocks of the current video frame.

49. (Withdrawn) The quantitizer selector of claim 47, wherein the logic is further to prevent the quantization parameter from falling below two-thirds of a mean value of the quantization parameters for previous video frame.

50. (Currently Amended) A method, comprising:

acquiring a compression time associated with a time used by a compressor to compress a frame of uncompressed image data under ~~the~~ control of a processor that performs a bit rate control ~~of~~ⁱⁿ the compressor;

receiving at the processor, separate from uncompressed image data stored in a first data storage queue, a respective current byte count of a current frame of the uncompressed image data stored in the first data storage queue, and receiving separate from compressed image data stored in a second data storage queue, a current byte count of the compressed image data stored in the second data storage queue, to allow the processor to facilitate an adjustment~~ing~~ of a target frame rate; and

determining by a controller that receives the current frame of uncompressed image data and provides the current frame of uncompressed image data to the first data storage queue, a capability of the processor to compress image data based on whether a difference between the compression time and a target frame period exceeds a threshold, wherein the compression time is based at least in part upon a quantization parameter ~~determined~~calculated and selected by the processor based at least in part upon a mean value of a plurality of quantization parameters for a previous frame~~to fall within an upper and a lower limit for each row of macroblocks in the current frame.~~

51. (Previously Presented) The method of claim 50, further comprising adjusting the target frame rate based at least in part on the compression time.

52. (Previously Presented) The method of claim 51, wherein said target frame rate is adjusted to a value equal to a frame rate of a video capture device divided by an integer divisor.

53. (Previously Presented) The method of claim 52, wherein the frame rate of the video capture device is 30 frames per second and the integer divisor has a value between 1 and 30.

54. (Previously Presented) The method of claim 50, wherein the threshold corresponds to a predetermined portion of the target frame period.

55. (Currently Amended) A system, comprising:

a processor to perform a bit rate control to compress a frame of uncompressed image data;

a controller coupled to said processor to determine a capability of a codec under the control of the processor to compress image data based on whether a difference between a compression time for a current frame and a target frame period exceeds a threshold, wherein the compression time is based at least in part upon a quantization parameter ~~determined~~ calculated and selected by the processor ~~to fall within an upper and a lower limit for each row of macroblocks in the current frame~~ based at least in part upon a mean value of quantization parameters for a previous frame; and

a compressor including the processor and the codec, the compressor further including a first data storage queue and a second data storage queue ~~coupled~~ configured to provide the processor, separate from uncompressed image data stored in the first data storage queue, a respective current byte count of ~~a current frame of the~~ uncompressed image data stored in the first data storage queue, and separate from compressed image data stored in the second data storage queue, a current byte count of the compressed image data stored in the second data storage queue, to allow the processor to facilitate an ~~adjustment~~ ing of a target frame rate.

56. (Currently amended) The system of claim 55, wherein said controller is further configured to adjust said target frame rate based at least in part on the compression time.

57. (Currently amended) The system of claim 56, wherein said controller is further configured to adjust said target frame rate to a value equal to a frame rate of a video capture device divided by an integer divisor.

58. (Previously Presented) The system of claim 57, wherein the frame rate of the video capture device is 30 frames per second and the integer divisor has a value between 1 and 30.

59. (Previously Presented) The system of claim 55, wherein the threshold corresponds to a predetermined portion of the target frame period.

60. (Previously Presented) The system of claim 55, wherein the codec is coupled to receive the uncompressed image data from the first data storage queue and coupled to provide the compressed image data to the second data storage queue.

61. (Currently amended) The system of claim 60, wherein the processor is configured to control a compression rate of the codec.

62. (Currently Amended) A system, comprising:

a compressor including a processor, and further including:

a first data storage queue for uncompressed image data; and

a second data storage queue for compressed image data, the first and the second data storage queue to be coupled to a codec to allow the codec to compress the uncompressed image data under ~~the~~ control of a bit rate controller including the processor, the processor to be coupled to receive a current byte count of a current frame of the uncompressed image data stored in the first data storage queue and to adjust a compression algorithm used by the codec to compress the uncompressed image data; and

a controller coupled to the processor and configured to determine a capability of the codec to compress the uncompressed image data based on whether a difference between a compression time for a current video frame and a target frame period exceeds a threshold, the determining to be performed to facilitate adjusting a target frame rate based at least in part on the compression time, wherein the compression time is based at least in part upon a quantization parameter ~~determined~~ calculated and selected by the processor ~~to fall within an upper and a lower limit for each row of macroblocks in the current frame based at least in part upon a mean value of quantization parameters for a previous video frame.~~

63. (Currently Amended) The system of claim 62 wherein the processor is configured to provides each of the first and the second data storage queues with a control signal and ~~each of the first and the second data storage queues respectively is configured to~~ provides the processor with a ~~current byte count of the uncompressed image data and~~ a current byte count of the compressed image data.

64. (Previously Presented) The system of claim 62, wherein the threshold corresponds to a predetermined portion of a target frame period.

65. (Previously Presented) The system of claim 62, wherein the compression algorithm is configured to compare a bit usage distribution of a current video frame to a bit usage distribution of a previous video frame.

66. (Canceled).

67. (New) An apparatus, comprising:
a compressor, including:

a processor configured to perform a bit rate control to compress a frame of uncompressed image data; and

a codec coupled to the processor, and configured to compress image data based on whether a difference between a compression time for a current frame and a target frame period exceeds a threshold, wherein the compression time is based at least in part upon a quantization parameter calculated and selected by the processor based at least in part upon a mean value of quantization parameters for a previous frame;

wherein the compressor further includes a first data storage queue and a second data storage queue coupled to provide the processor, separate from uncompressed image data stored in the first data storage queue, a respective current byte count of uncompressed image data stored in the first data storage queue, and separate from compressed image data stored in the second data

storage queue, a current byte count of the compressed image data stored in the second data storage queue, to allow the processor to facilitate an adjustment of a target frame rate.

68. (New) The apparatus of claim 69, wherein the quantization parameter is further calculated based at least in part upon a local and a global adjustment parameter.

69. (New) The apparatus of claim 70, wherein the local adjustment parameter is based at least in part upon a difference between a number of bits used to compress the current frame and a target number of bits for compressing the current frame.

70. (New) The apparatus of claim 69, wherein the quantization parameter is configured to fall within an upper and a lower limit for each row of macroblocks in the current frame.